

PEGGY E. O'NEILL

PRESENT POSITION (January, 1980 to present):

Physical Scientist
AST, Earth Science Remote Sensing
Hydrological Sciences Branch / Code 614.3
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EDUCATION:

1976 - B.S. Geography, Northern Illinois University
(summa cum laude, with university honors)
1979 - M.A. Geography, University of California,
Santa Barbara
1989-1992 - Ph.D. studies, Civil and Environmental Engineering,
Cornell University

PREVIOUS POSITIONS:

1976-1977 Teaching Assistant, Department of Geography,
University of California, Santa Barbara
1978-1979 Staff Research Associate, Geography Remote
Sensing Unit, University of California, Santa Barbara

PROFESSIONAL SOCIETIES AND COMMITTEES:

American Geophysical Union; *Senior Member*, IEEE Geoscience and Remote Sensing Society;
American Meteorological Society; International Association of Hydrological Sciences;
Technical Program Committee, 2004-8 IEEE International Geoscience & Remote Sensing
Symposium; Program Committee, 2008 Microwave Land Hydrology Workshop; Co-Chair, 13th
AMS Conference on Hydrology; Past member (2 terms), AMS Committee on Hydrology;
Member, Institute for Electromagnetic Modeling and Applications; Past member, AMS
Scientific and Technological Activities Commission (STAC); Member, Program Committee,
1993 and 1994 AMS Conference on Hydrometeorology; Member, Technical Program
Committee, Symposium S8, IAHS 3rd Scientific Assembly; Chairman, Publications and
Publicity Committee, and Member, Organizing Committee, 1990 IEEE International Geoscience
& Remote Sensing Symposium

RESEARCH INTERESTS:

-- research in the dynamics of moisture storage and transfer in the soil-vegetation-atmospheric
boundary layer, primarily through microwave remote sensing techniques; development and
validation of accurate soil moisture retrieval algorithms; application of remotely-sensed soil
moisture to land surface process modeling and watershed hydrology; advanced mission
definition and technology development.

SELECTED PROFESSIONAL EXPERIENCE:

- SMAP Deputy Project Scientist
- NASA representative to the NPOESS Joint Agency Requirements Group
- GSFC Project Scientist for Hydros, and Member, HYDROS Science, Proposal, and Risk Reduction Teams
- Member, NASA/THP Soil Moisture Mission Working Group, International Soil Moisture Mission Working Group, and NPOESS Soil Moisture Working Group
- Member, NPOESS Microwave Operational Algorithm Team for CMIS (Concial Microwave Imaging Sounder), and Advisor, NPOESS CMIS SSET (Source Selection Evaluation Team)
- Member, AMSR-E and SMOS calibration /validation teams
- Member, CLASIC, SMEX'05, '04, '03, & '02, SGP99, SGP97, Washita '94 & '92 experiment teams
- Principal Investigator, Development of a truck-based combined L Band radar/radiometer [ComRAD] (incl. use as a single-beam SMAP, Aquarius, and SMOS simulator)
- Principal Investigator, THP/Discovery project, Soil Moisture Retrieval through Small Tree Canopies
- Co-Principal Investigator, NASA GWEC project to examine active/passive microwave retrievals of soil moisture under changing vegetation conditions
- Principal Investigator and Co-Investigator of several NASA hydrology RTOP tasks related to remote sensing of soil moisture and its application to land surface process modeling
- Co-Investigator, soil moisture mapping using ENVISAT ASAR data, and Co-Investigator, SIR-C experiment to examine applications of SAR to watershed hydrology
- Co-Principal Investigator, "Large 2-D STAR: Architecture Trade Study" [IR&D]
- Science Advisor on NASA ATIP/ACT/AIST technology projects related to aperture synthesis radiometry and microwave instrument sensor webs
- Science Lead, ESTO Workshop on Materials and Structures, and Science Member, ESTO Workshop on Microwave Radiometry
- Deputy Study Scientist, HYDROSTAR proof-of-concept soil moisture study project and Principal Investigator, HYDROSTAR follow-on tasks and design studies, and Member, HYDROSTAR ESSP Proposal and Science Teams
- Science Team Leader, EX-4a Post-2002 NASA Mission Concept Study

AWARDS:

- Recipient of twenty-four NASA GSFC Certificate of Outstanding Performance and Special Achievement Awards 1981-2008 (plus three certificates of appreciation for mentoring activities)
- Recipient, Robert H. Goddard Honor Award for Mentoring, 2008
- Recipient, ATHS Tradition of Excellence Award 2001
- Recipient, 1994 IGARSS Symposium Prize Paper Award (as co-author)
- Recipient, USDA Certificate of Appreciation 1994
- Recipient, NASA Research and Study Fellowship 1989-1990

REFEREED PUBLICATIONS:

1. Estes, J. E., P. E. O'Neill and M. Wilson, "Radar Detection of Surface Oil Accumulations," in Radar Geology: An Assessment, JPL Publication 80-61, September 1, 1980.
2. Wilson, M. J., P. E. O'Neill, J. E. Estes and M. Deutsch, "Satellite Detection of Oil on the Marine Surface," in Satellite Hydrology, ed. Deutsch, M., Wiesnet, D. R. and Rango, A., 1981, AWRA, Minneapolis, MN, pp. 593-602, 1981.
3. Rango, A. and P. E. O'Neill, "Effective Watershed Management Using Remote Sensing Technology," Remote Sensing for Resource Management, Soil Conservation Society of America, Ankeny, Iowa, pp. 301-308, 1982.
4. Njoku, E. G. and P. E. O'Neill, "Multifrequency Microwave Radiometer Measurements of Soil Moisture," IEEE Trans. on Geosci. and Rem. Sens., GE-20, No. 4, pp. 468-475, October, 1982.
5. Wang, J. R., P. E. O'Neill, T. J. Jackson and E. T. Engman, "Multifrequency Measurements of the Effects of Soil Moisture, Soil Texture, and Surface Roughness," IEEE Trans. on Geosci. and Rem. Sens., GE-12, No. 1, pp. 44-51, January 1983.
6. Blanchard, B. J. and P. E. O'Neill, "Estimation of the Hydraulic Character of Soils with Passive Microwave Systems," Proceedings of the Conf. on Advances in Infiltration, ASAE, Chicago, IL, December 1983. (Peer reviewed)
7. Jackson, T. J., T. J. Schmugge and P. E. O'Neill, "Passive Microwave Remote Sensing of Soil Moisture from an Aircraft Platform," Remote Sensing of Environment, 14, pp. 135-151, 1984.
8. O'Neill, P. E., T. J. Jackson, B. J. Blanchard, J. R. Wang and W. I. Gould, "Effects of Corn Stalk Orientation and Water Content on Passive Microwave Sensing of Soil Moisture," Remote Sensing of Environment, 16, pp. 55-67, 1984.
9. O'Neill, P. E., "Microwave Remote Sensing of Soil Moisture: A Comparison of Results from Different Truck and Aircraft Platforms," International Journal of Remote Sensing, Vol. 6, No. 7, pp. 1125-1134, 1985.
10. Jackson, T. J. and P. E. O'Neill, "Aircraft Scatterometer Observations of Soil Moisture on Rangeland Watersheds," International Journal of Remote Sensing, 6, No. 7, pp. 1135-1152, 1985.
11. Schmugge, T. J., P. E. O'Neill and J. R. Wang, "Passive Microwave Soil Moisture Research," AgRISTARS Special Edition, IEEE Transactions on Geoscience and Remote Sensing, GE-24, No. 1, pp. 12-22, 1986.
12. Camillo, P. J., P. E. O'Neill and R. J. Gurney, "Estimating Soil Hydraulic Parameters Using Passive Microwave Data," IEEE Transactions on Geoscience and Remote Sensing, GE-24, No. 6, pp. 930-936, 1986.
13. Jackson, T. J. and P. E. O'Neill, "Microwave Dielectric Model for Aggregated Soils," IEEE Transactions on Geoscience and Remote Sensing, GE-24, No. 6, pp. 920-929, 1986.

14. Jackson, T. J. and P. E. O'Neill, "Temporal Observations of Surface Soil Moisture Using a Passive Microwave Sensor," Remote Sensing of Environment, 21, pp. 281-296, 1987.
15. Jackson, T. J. and P. E. O'Neill, "Salinity Effects on the Microwave Emission of Soils," IEEE Transactions on Geoscience and Remote Sensing, GE-25, No. 2, pp. 214-220, 1987.
16. Jackson, T. J., M. E. Hawley and P. E. O'Neill, "Preplanting Soil Moisture Assessment Using Passive Microwave Sensors," Water Resources Bulletin, 23, No. 1, pp. 11-19, 1987.
17. Promes, P. M., T. J. Jackson, and P. E. O'Neill, "Significance of Agricultural Row Structure on the Microwave Emissivity of Soils," IEEE Transactions on Geoscience and Remote Sensing, GE-26, September 1988, No. 5, pp. 580-589, 1988.
18. O'Neill, P. E. and T.J. Jackson, "Observed Effects of Soil Organic Matter Content on the Microwave Emissivity of Soils," Remote Sensing of Environment, 31, pp. 175-182, 1990.
19. Jackson, T. J. and P.E. O'Neill, "Attenuation of Microwave Emission by Corn and Soybeans at 1.4 and 5 GHz," IEEE Trans. Geoscience and Remote Sensing, 28, no. 5, pp. 978-980, 1990.
20. Jackson, T. J. and P.E. O'Neill, "Microwave Emission and Crop Residues," Remote Sensing of Environment, 36, pp. 129-136, 1991.
21. Jackson, T.J., D.M. LeVine, A. Griffis, D.C. Goodrich, T.J. Schmugge, C.T. Swift and P.E. O'Neill, "Soil moisture and rainfall estimation over a semiarid environment with the ESTAR microwave radiometer," IEEE Trans. on Geoscience and Remote Sensing, 31, No. 4, pp. 836-841, July, 1993.
22. O'Neill, P.E., T.J. Jackson, N.S. Chauhan and M.S. Seyfried, "Microwave Soil Moisture Estimation in Humid and Semiarid Watersheds," Advances in Space Research, Vol. 13, No. 5, pp. 115-118, 1993.
23. O'Neill, P.E., N.S. Chauhan, and T.J. Jackson, "Use of Active and Passive Microwave Remote Sensing for Soil Moisture Estimation Through Corn," International Journal of Remote Sensing, Vol. 17, No. 10, pp. 1851-1865, 1996.
24. Shi, J., J. Wang, A. Hsu, P. O'Neill, and E. Engman, "Estimation of Bare Surface Soil Moisture and Surface Roughness Parameters Using L-Band SAR Image Data," IEEE Trans. on Geoscience and Remote Sensing, Vol. 35, No. 5, pp. 1254-1266, 1997.
25. Wang, J.R., A. Hsu, J.C. Shi, P.E. O'Neill, and E.T. Engman, "Estimating Surface Soil Moisture From SIR-C Measurements Over the Little Washita River Watershed," Remote Sensing of Environment, 59: 308-320, 1997.
26. Jackson, T. J., P. E. O'Neill, and C. T. Swift, "Passive Microwave Observation of Diurnal Surface Soil Moisture," IEEE Trans. on Geoscience and Remote Sensing, GE-35, No. 5, pp. 1210-1222, 1997.
27. Burke, E. J., R. J. Gurney, L. P. Simmonds, and P. E. O'Neill, "Using a Modeling Approach to Predict Soil Hydraulic Properties from Passive Microwave Measurements," IEEE Trans. on Geoscience and Remote Sensing, vol. 36, no. 2, pp. 454-462, 1998.

28. Goyal, S. K., M. S. Seyfried, and P. E. O'Neill, "Effect of DEM Resolution on Topographic Correction of Airborne Synthetic Aperture Radar," International Journal of Remote Sensing, vol. 19, no. 16, 1998.
29. Schmugge, T.J., T.J. Jackson, P.E. O'Neill, and M.B. Parlange, "Observations of Coherent Emissions from Soils," Radio Science, vol. 33, no. 2, pp. 267-272, 1998.
30. Jackson, T.J., T.J. Schmugge, P.E. O'Neill, and M.B. Parlange, "Soil Water Infiltration Observation with Microwave Radiometers," IEEE Trans. on Geoscience and Remote Sensing, vol. 36, no. 5, pp. 1376-1383, 1998.
31. Goyal, S.K., M.S. Seyfried, and P.E. O'Neill, "Correction of Surface Roughness and Topographic Effects on Airborne SAR in Mountainous Rangeland Areas," Remote Sensing of Environment, vol. 67, pp. 124-136, 1999.
32. Laymon, C., W. Crosson, V. Soman, W. Belisle, T. Coleman, A. Fahsi, A. Manu, Z. Senwo, T. Tsegaye, R. Hood, J. Luvall, S. Wu, P. O'Neill, and T. Jackson, "Huntsville '96: An Experiment in Ground-based Microwave Remote Sensing of Soil Moisture," International Journal of Remote Sensing, vol. 20 (4), pp. 823-828, 1999.
33. Cahill, A., M. Parlange, T. Jackson, P. O'Neill, and T. Schmugge, "Evaporation from Nonvegetated Surfaces: Surface Aridity Methods and Passive Microwave Remote Sensing," Journal of Applied Meteorology, vol. 38, pp. 1346-1351, 1999.
34. Jackson, T., A. Hsu, and P. O'Neill, "Surface Soil Moisture Retrieval and Mapping Using High Frequency Microwave Satellite Observations in the Southern Great Plains," AMS Journal of Hydrometeorology, vol. 3, pp. 688-699, December, 2002.
35. Shi, J-C, K. S. Chen, Q. Li, T. J. Jackson, P. E. O'Neill, and L. Tsang, "A Parameterized Surface Reflectivity Model and Estimation of Bare Surface Soil Moisture with L-Band Radiometers," IEEE Trans. on Geoscience and Remote Sensing, vol. 40, no. 12, pp. 2674-2686, 2002.
36. Njoku, E., V. Lakshmi, and P. O'Neill, *Guest Editors, Special Issue on SMEX02*, Remote Sensing of Environment, vol. 92, Issue 4, September, 2004.
37. Entekhabi, D., E. Njoku, P. Houser, M. Spencer, T. Doiron, J. Smith, R. Girard, S. Belair, W. Crow, T. Jackson, Y. Kerr, J. Kimball, R. Koster, K. McDonald, P. O'Neill, T. Pultz, S. Running, JC Shi, E. Wood, and J. van Zyl, "The Hydrosphere State (Hydros) Satellite Mission: An Earth System Pathfinder for Global Mapping of Soil Moisture and Land Freeze/Thaw," IEEE Trans. on Geoscience and Remote Sensing, vol. 42, no. 10, October, 2004, pp. 2184-2195.
38. Crow, W., T. Chan, D. Entekhabi, P. Houser, A. Hsu, T. Jackson, E. Njoku, P. O'Neill, JC Shi, and X. Zhan, "An Observing System Simulation Experiment for Hydros Radiometer-Only Soil Moisture Products," IEEE Trans. on Geoscience and Remote Sensing, 43(6), pp. 1289-1303, 2005.
39. Moran, S., P. O'Neill, and T. Jackson, *Guest Editors, Special Issue on SMEX04*, Remote Sensing of Environment, Vol. 112, no. 2, February, 2008

40. Joseph, A., R. van de Velde, P. O'Neill, B. Choudhury, S. Liang, R. Lang, E. Kim, T. Gish, and P. Houser, "L band observations over a corn canopy during the entire growing season," International Journal of Remote Sensing, in revision, 2008.
41. O'Neill, P., A. Joseph, R. Lang, E. Kim, and T. Gish, "Microwave Transmissivity and Optical Depth of a Corn Canopy Through a Growing Season," IEEE Geoscience and Remote Sensing Letters, in revision, 2008.
42. Zhan, X., W. Crow, T. Jackson and P. O'Neill, "Improving Spaceborne Radiometer Soil Moisture Retrievals with Alternate Aggregation Rules for Ancillary Parameters," IEEE Geoscience and Remote Sensing Letters, Vol. 5, No. 2, pp. 261-265, July, 2008.
43. Joseph, A., R. van de Velde, P. O'Neill, R. Lang, and T. Gish, "Soil Moisture Retrieval During a Corn Growth Cycle Using 1.6 GHz Radar Observations," IEEE Trans. on Geoscience and Remote Sensing, Vol. 46, No. 8, August, 2008.
44. Moran, S., R. Scott, T. Keefer, W. Emmerich, M. Hernandez, G. Nearing, G. Paige, M. Cosh, and P. O'Neill, "Partitioning Evapotranspiration in SemiArid Grassland and Shrubland Ecosystems Using Time Series of Soil Surface Temperature," accepted for publication in *Agricultural and Forest Meteorology*, 2008.
45. Cosh, M., P. O'Neill, L. McKee, J. Tao, and T. Jackson, "Land Cover Classification in a Diverse Agricultural Landscape: the National Airborne Field Experiment," being submitted to *IEEE Geoscience and Remote Sensing Letters*, May, 2008.

OTHER PUBLICATIONS:

1. O'Neill, P. E. and E. Aderhold, "Evaluation of Signal to Noise," in AOSS II Systems Verification Test, Aerojet Electro-Systems Contract No. DOT-CG-52660-A, 1977.
2. O'Neill, P.E., S. G. Atwater and J. E. Estes, "Ground Truth Data Report: 1978 Kern County, California Microwave/Thermal Infrared Soil Moisture Experiment," Final Report, NASA, JPL Contract No. 955032, 1978.
3. Atwater, S. G., P. E. O'Neill and J. E. Estes, "Ground Truth Data Report: 1979 Kern County, California Microwave/Thermal Infrared Soil Moisture Experiment," Final Report, NASA, JPL Contract No. 955032, 1979.
4. Wilson, M. J., P. E. O'Neill, E. J. Hajic, A.J. Lewis and J. E. Estes, "Analysis of Seasat-A SAR Data for the Detection of Oil on the Ocean Surface," Final Report, U.S.G.S. Grant No. 14-08-001-G-560, 1979.
5. Jackson, T. J., T. J. Schmugge, L. H. Allen, Jr., P.E. O'Neill, R. Slack, J. R. Wang and E. T. Engman, "Aircraft Remote Sensing of Soil Moisture and Hydrologic Parameters: Taylor Creek, FL and Little River, GA, 1979 Data Report," SM-R2-04309 (ARR-NE-13), September 1981, USDA/ARS, 1981.
6. Wang, J. R., P. E. O'Neill, E. T. Engman, J. E. McMurtrey, III, P. Lawless, T. J. Schmugge, T. J. Jackson, W. I. Gould, J. E. Fuchs and W. S. Glazar, "Remote Measurements of Soil Moisture by Microwave Radiometers at BARC Test Site, II," SM-G2-04315 (TM-83954), June 1982, GSFC, 1982.
7. Jackson, T. J., P. E. O'Neill, G. C. Coleman and T. J. Schmugge, "Aircraft Remote Sensing of Soil Moisture and Hydrologic Parameters, Chickasha, Okla., 1980 Data Report," SM-R2-04352 (ARR-NE-14), July 1982, USDA/ARS, 1982.
8. O'Neill, P., T. Jackson, B. Blanchard, R. van den Hoek, W. Gould, J. Wang, W. Glazar, and J. McMurtrey, "The Effects of Vegetation and Soil Hydraulic Properties on Passive Microwave Sensing of Soil Moisture: Data Report for the 1982 Field Experiments," III, TM 85106, NASA/GSFC, Greenbelt, MD, 1983.
9. Wang, J., T. Jackson, E. Engman, W. Gould, J. Fuchs, W. Glazar, P. O'Neill, T. Schmugge, and J. McMurtrey, "Microwave Radiometer Experiment of Soil Moisture Sensing at BARC Test Site During Summer 1981," TM 86056, NASA/GSFC, Greenbelt, MD, 1984.
10. Jackson, T. J., J. Shiue, P. E. O'Neill, J. R. Wang, J. Fuchs, and M. Owe, "L Band Push Broom Microwave Radiometer--Soil Moisture Verification and Time Series Experiment/Delmarva Peninsula: Data Report," TM 86068, NASA/GSFC, Greenbelt, MD, 1984.
11. Blanchard, B. J. and P. E. O'Neill, "Radar Response from Vegetation with Nodal Structure," TM 86066, NASA/GSFC, Greenbelt, MD, 1984.
12. Jackson, T. J., P. E. O'Neill, J. Wang and J. Shiue, "Evaluation of a Pushbroom Microwave Radiometer Aircraft Soil Moisture Remote Sensing System," Proc. of 1984 Winter Meeting of American Society of Agricultural Engineers, New Orleans, Louisiana, December 11-14, 1984.

13. Jackson, T. J., P. E. O'Neill, G. van der Kolff, G. J. Koopman and J. R. Wang, "Effects of Soil Properties on the Microwave Emission of Soils," Proc. of the 4th International Symposium on Remote Sensing for Soil Survey, International Society of Soil Science, Wageningen and Enschede, The Netherlands, March 4-8, 1985.
14. Owe, M., P. E. O'Neill, T. J. Jackson and T. J. Schmugge, "The Effect of Vegetation Type, Microrelief and Incidence Angle on Radar Backscatter," NASA/JPL Aircraft Radar Workshop, JPL Publ. 85-39, Pasadena, CA, pp. 25-30, 1985.
15. Jackson, T. J., M. E. Hawley, J. Shiue, V. Delnore, P. E. O'Neill, M. Owe and R. W. Lawrence, "Assessment of Preplanting Soil Moisture Using Airborne Microwave Sensors," Proc. of the International Workshop on Hydrologic Applications of Space Technology, IAHS, Cocoa Beach, FL, August 18-24, 1985.
16. O'Neill, P. E., P. J. Camillo and R. J. Gurney, "Estimation of Soil Hydraulic Properties with Microwave Techniques," invited paper, Proc. of IGARSS '85, IEEE, Amherst, MA, October, 1985.
17. Jackson, T. J., G. J. Koopman, P. E. O'Neill and J. R. Wang, "Effects of Soil Tillage on the Microwave Emission of Soils," invited paper, Proc. of IGARSS '85, IEEE, Amherst, MA, October 7-9, 1985.
18. Jackson, T. J. and P. E. O'Neill, "Salinity Effects on the Microwave Emission of Soils," Proceedings of the 1986 International Geoscience and Remote Sensing Symposium, IEEE, University of Zurich-Irchel, Switzerland, September 8-11, 1986.
19. van de Griend, A. A. and P. E. O'Neill, "Discrimination of Soil Hydraulic Properties by Combined Thermal Infrared and Microwave Remote Sensing," Proceedings of IGARSS '86, IEEE/ESA, Univ. of Zurich-Irchel, Switzerland, September 8-11, 1986.
20. Jackson, T. J. and P. E. O'Neill, "The Effects of Soil Organic Matter Content on Microwave Emissivity," Proceedings of IGARSS '88, IEEE, Edinburgh, Scotland, Sept. 13-16, 1988, pp. 673-676, 1988.
21. Jackson, T. J. and P. E. O'Neill, "Attenuation of Soil Microwave Emissivity by Corn and Soybeans at 1.4 and 5 GHz," Proceedings of IGARSS '89, IEEE, Vancouver, B.C., July 10-14, 1989, pp. 1165-1168, 1989.
22. Lang, R. H., D. M. LeVine, P. E. O'Neill, S. Saatchi, O. Yazici, and T. J. Jackson, "Comparison of Theoretical and Measured Brightness Temperature of a Soybean Canopy," Proceedings of IGARSS '89, IEEE, Vancouver, B.C., July 10-14, 1989, pp. 400-404, 1989.
23. Jackson, T. J. and P. E. O'Neill, "Passive Microwave Emission and Crop Residues," Digest of Signature Problems in Microwave Remote Sensing of the Surface of the Earth, URSI Commission F, Hyannis, MA, May 15-17, 1990.
24. Saatchi, S., P. Dubois, J. VanZyl, D. Evans, P. O'Neill, and E. Engman, "Detection of Soil Moisture and Biomass Changes Using SAR Imagery," EFEDA Preliminary Results Meeting, Germany, February, 1992.

25. O'Neill, P., N. Chauhan, S. Saatchi and T. Jackson, "Synergistic Use of Active and Passive Microwave in Soil Moisture Estimation," IGARSS '92, Clear Lake, TX, May 26-29, pp. 492-294, 1992.
26. Chauhan, N., P. O'Neill, D. LeVine, N. Khadr, and R. Lang, "L Band Radar Scattering from Grass," IGARSS '92, Clear Lake, TX, May 26-29, pp. 1757-1759, 1992.
27. Jackson, T., D. LeVine, A. Griffis, D. Goodrich, T. Schmugge, C. Swift, P. O'Neill, R. Roberts, and R. Parry, "Soil Moisture Verification Study of the ESTAR Microwave Radiometer: Walnut Gulch, AZ 1991," IGARSS '92, Clear Lake, TX, May 26-29, pp. 486-488, 1992.
28. O'Neill, P., T. Jackson, N. Chauhan and M. Seyfried, "Soil Moisture Estimation in Humid and Semi-Arid Watersheds," COSPAR, World Space Congress, Washington, DC, August 28-Sept. 5, 1992.
29. O'Neill, P.E., N.S. Chauhan, and R. Lang, "Ground-Based Radar Measurements During the Washita '92 Hydrology Experiment," AGU, Baltimore, MD, May 24-28, p. 132, 1993.
30. O'Neill, P.E. and N.S. Chauhan, "Truck Mounted Radar System," Chapter XII in Hydrology Data Report: WASHITA '92, T.J. Jackson and F.R. Schiebe, Eds., NAWQL Report 93-1, August 1993.
31. Engman, E. and P. O'Neill, "Washita/MacHydro '92," IEEE Geoscience and Remote Sensing Society Newsletter, #89, Dec., 1993.
32. Jackson, T.J., J. Aleksa, C.T. Swift, P.E. O'Neill, and D. Entekhabi, "Multifrequency Passive Microwave Plot Studies of Soil Moisture," AGU, Baltimore, MD, May 23-27, p. 163, 1994.
33. O'Neill, P.E., A.Y. Hsu, and M.S. Seyfried, "SAR Terrain Correction for Improved Soil Moisture Estimation in a Mountain Watershed," Proceedings of IGARSS '94, Pasadena, CA, August 8-12, 1994, Vol. III, pp. 1429-1431.
34. O'Neill, P.E., N.S. Chauhan, T.J. Jackson, D.M. Le Vine, and R.H. Lang, "Microwave Soil Moisture Prediction Through Corn in Washita '92," Proceedings of IGARSS '94, Pasadena, CA, August 8-12, 1994, Vol. III, pp. 1585-1587.
35. Jackson, T.J., J. Aleksa, C.T. Swift, P.E. O'Neill, and K. Kostov, "Diurnal Observations of Soil Moisture with Passive Microwave Radiometers," Proceedings of IGARSS '94, Pasadena, CA, August 8-12, 1994, Vol. III, pp. 1570-1572.
36. Shi, J., P. O'Neill, A. Hsu, J. van Zyl, and M. Seyfried, "Estimation of Soil Moisture and Surface Roughness Parameters Using L-Band SAR Measurements," Proceedings Volume 2314, Conf. on Microwave Sensing for Forestry and Hydrology, European Optical Society/SPIE, Rome, Italy, Sept. 26-30, 1994.
37. O'Neill, P. and J. Petrella, "Comparison of Truck-Mounted Radar Measurements with SIR-C Microwave Data for Soil Moisture Estimation," Research and Technology Report, NASA/GSFC, 1994, pp. 124-126.

38. Goyal, S.K., M.S. Seyfried, and P.E. O'Neill, "Averaging and Aggregation of SAR Data for Reduction of Noise Due to Topography in Mountainous Areas," AGU, San Francisco, CA, Dec. 5-9, 1994.
39. Shi, J., J. Wang, P. O'Neill, A. Hsu, and E.T. Engman, "Application of IEM Model to Soil Moisture and Surface Roughness Estimation," Fifth Annual JPL Airborne Earth Science Workshop, JPL, Pasadena, CA, January, 1995, Vol.3, pp. 51-54.
40. O'Neill, P., A. Hsu, and T. Jackson, "Use of Active and Passive Microwave Measurements from Multiple Platforms for Soil Moisture Estimation," AGU, Baltimore, MD, May 29-June 2, 1995.
41. Wood, E., V. Pauwels, T. Jackson, E. Engman, P. O'Neill, and F. Schiebe, "Using SIR-C Shuttle Radar Laboratory (SRL) for Soil Moisture Remote Sensing in the Little Washita Catchment: Initial Results," AGU, Baltimore, MD, May 29-June 2, 1995.
42. O'Neill, P.E., J.J. Petrella, and A.Y. Hsu, "Comparison of Multifrequency Truck Radar and SIR-C Backscatter for Soil Moisture Estimation in Washita '94," Proc. IGARSS '95, IEEE, Florence, Italy, July 10-14, 1995, Vol. I, pp. 368-370..
43. O'Neill, P.E., A.Y. Hsu, and J.C. Shi, "Soil Moisture Estimation Using Time-Series Radar Measurements of Bare and Vegetated Fields in Washita '92," Proc. IGARSS '95, IEEE, Florence, Italy, July 10-14, 1995, Vol. I, pp. 498-500.
44. Jackson, T.J, P.E. O'Neill, W.P. Kustas, E. Bennett, and C.T. Swift, "Passive Microwave Observation of Diurnal Soil Moisture at 1.4 and 2.65 GHz," Proc. IGARSS '95, IEEE, Florence, Italy, July 10-14, 1995, Vol. I, pp. 492-494.
45. Wang, J.R., P.E. O'Neill, E.T. Engman, R. Pardipuram, J.C. Shi, and A.Y. Hsu, "Estimating Surface Soil Moisture from SIR-C Measurements Over the Little Washita Watershed," Proc. IGARSS '95, IEEE, Florence, Italy, July 10-14, 1995, Vol. III, pp. 1982-1984.
46. Shi, J., J. Wang, A. Hsu, P. O'Neill, and E. Engman, "Estimation of Soil Moisture and Surface Roughness Parameters Using L-band SAR Measurements," Proc. IGARSS '95, IEEE, Florence, Italy, July 10-14, 1995, Vol. I, pp. 507-509.
47. Goyal, S.K., M.S. Seyfried, and P.E. O'Neill, "Removal of Relief Effects from AIRSAR for Soil-Water Determination in Semi-Arid Mountainous Areas," AGU, San Francisco, CA, Dec. 11-15, 1995, supplement to EOS, Vol. 76, No. 46, Nov. 7, 1995, p. F236.
48. O'Neill, P. and S. Bergeson-Willis, "HYDROSTAR: A Soil Moisture Measurement Mission," Joint Earth Science Missions and Technology Workshop, NASA/GSFC and LaRC, Williamsburg, VA, March 5-7, 1996.
49. Jackson, T., L.L. Tang, A. Hsu, E. Wood, P. O'Neill, and E. Engman. Washita '94 SIR- C/X-SAR Data Sets. Published on CD-ROM by NASA Goddard Space Flight Center, Greenbelt, MD, March, 1996.
50. O'Neill, P., A. Hsu, T. Jackson, and E. Wood, "Investigation of the Accuracy of Soil Moisture Inversion Using Microwave Data and Its Impact on Watershed Hydrological Modeling," Proceedings of IGARSS '96, IEEE, Lincoln, NE, May 27-31, 1996, Vol. II, pp. 1061-1063.

51. Jackson, T., L.L.Tang, E. Wood, A. Hsu, P. O'Neill, and E. Engman, "SIR-C/X-SAR as a Bridge to Soil Moisture Estimation Using Current and Future Operational Satellite Radars," Proc of IGARSS '96, IEEE, Lincoln, NE, May 27-31, 1996, Vol. II, pp. 1064-1066.
52. Fung, A., K. Chen, A. Hsu, E. Engman, P. O'Neill, and J. Wang, "A Modified IEM Model for Scattering from Soil Surfaces with Application to Soil Moisture Sensing," Proc. of IGARSS '96, IEEE, Lincoln, NE, May 27-31, 1996, Vol. II, pp. 1297-1299.
53. Zion, M., E. Wood, and P. O'Neill, "Use of Remotely Sensed Soil Moisture to Calibrate and Validate Hydrological Models," Spring Meeting, AGU, Baltimore, MD, May, 1996.
54. O'Neill, P., J. Petrella, and J. Fuchs, "Chapter XVI: Multifrequency Truck-Mounted Radar System," in Hydrology Data Report: Washita '94, P. Starks and K. Humes, eds., NAWQL 96-1, USDA, June, 1996.
55. Seyfried, M.S., J.C. Ritchie, and P.E. O'Neill, "Use of remote sensing to measure soil water and vegetation in semiarid rangelands," Report of ARS Global Change Research Planning Workshop, 1996.
56. O'Neill, P. E., A. Y. Hsu, T. J. Jackson, E. F. Wood, and M. Zion, "Investigation of the Accuracy of Soil Moisture Inversion Using Microwave Data and Its Impact on Watershed Hydrological Modeling," Proceedings of the Third Intl. Workshop on Application of Remote Sensing in Hydrology, NHRI Symposium Series, Greenbelt, MD, October 16-18, 1996, pp. 211-226.
57. O'Neill, P.E. and D.M. Le Vine, "Microwave Radiometric Measurement of Soil Moisture: From Basic Principles to a Space Mission," Technology Showcase 96, NASA/GSFC, November 14, 1996.
58. Wood, E., P. O'Neill, T. Jackson, M. Zion, and A. Hsu, "Assessing Soil Moisture Remote Sensing Experiments for Hydrological Modeling and Analyses: Experiences from the Little Washita in 1992 and 1994," AGU Fall Meeting, Dec., 1996.
59. Cahill, A.T., M. Parlange, T. Jackson, and P. O'Neill, "Use of Remotely Sensed Data for Evaporation Prediction with Changing Surface Conditions," AGU Fall Meeting, Dec., 1996.
60. Laymon, C., T. Jackson, P. O'Neill, W. Crosson, A. Manu, T. Tsegaye, et al., "Huntsville '96 Microwave Remote Sensing of Soil Moisture Experiment: Overview and Preliminary Results," 13th Conference on Hydrology, American Meteorology Society, Long Beach, CA, February, 1997.
61. Belisle, W., A. Manu, T. Tsegaye, Z. Senwo, A. Fahsi, G. Roberson, J. Boggs, W. Tadesse, T. Coleman, P. O'Neill, T. Jackson, W. Crosson, and C. Laymon, "Comparison of Soil Moisture Determination Under Different Crop Coverages Using Remote Sensing and Conventional Methods," Proceedings of the 13th Conf. on Hydrology, AMS, Long Beach, CA, pp. 362-365, February, 1997.
62. O'Neill, P.E. and A.Y. Hsu, "The Impact of Microwave-Derived Surface Soil Moisture on Watershed Hydrological Modeling," in 1997 Research and Technology Report, NASA/GSFC, 1997.

63. O'Neill, P., A. Hsu, E. Wood, and M. Zion, "Soil Moisture Retrieval in a Vegetated Watershed Using SIR-C Radar Data and a Distributed Hydrological Model," AGU Spring Meeting, Baltimore, MD, May, 1997.
64. O'Neill, Peggy E., John J. Petrella, Roger H. Lang, and John E. Fuchs, "Multifrequency Truck-Mounted Radar System," in Huntsville '96 Data Report, GHCC, NASA/MSFC, 1997.
65. Hsu, A., P. O'Neill, E. Wood, and M. Zion, "Examination of Soil Moisture Retrieval Using SIR-C Radar Data and a Distributed Hydrological Model," Proc. of IGARSS '97, Singapore, August, 1997, Vol. III, pp. 1266-1268.
66. Jackson, T., T. Schmugge, W. Rawls, P. O'Neill, and M. Parlange, "Soil Water Infiltration Observation with Microwave Radiometers," Proc. of IGARSS '97, Singapore, August, 1997, Vol. III, pp. 1099-1101.
67. Shi, J-C, G. Sun, A. Hsu, P. O'Neill, J. Ranson, and E. Engman, "Estimation of Soil Moisture for Vegetated Surfaces Using Multi-Temporal L-Band SAR Measurements," Proc. of IGARSS '97, Singapore, August, 1997, Vol. III, pp. 1269-1271.
68. Belisle, W., N. Rajbhandhari, T. Tsegaye, A. Manu, Y. Liu, G. Roberson, T. Coleman, W. Crosson, T. Jackson, P. O'Neill, and M. Collins, "An Ideal Brightness Temperature Algorithm for Estimating Soil Profile Water Status: Part 1 -- Algorithm Development," Proc. of SPIE Symposium, London, England, September, 1997.
69. O'Neill, P., A. Hsu, T. Jackson, and C. Swift, "Truck-Based Microwave Radiometer Measurements During SGP '97," AGU Spring Meeting, Boston, MA, May, 1998.
70. O'Neill, P., A. Hsu, T. Jackson, and C. Swift, "Ground -Based Microwave Radiometer Measurements During the Southern Great Plains '97 Experiment," Proc. of IGARSS '98, Seattle, WA, July, 1998, pp. 1843-1845.
71. Hsu, A., P. O'Neill, P. Houser, E. Wood, and P. Doraiswamy, "Examination of Aggregation Effects in Watershed Hydrological Modeling Using Microwave-Derived Soil Moisture Data," Proc. of IGARSS '98, Seattle, WA, July, 1998, pp. 1840-1842.
72. Judge, J., A. England, W. Crosson, C. Laymon, P. O'Neill, B. Hornbuckle, D. Boprie, C. O'Kray, and E. Kim, "A Point-Scale LSP/R Model for Winter Wheat Stubble within the Region of SGP '97," Proc. of the 14th Conf. on Hydrology, AMS, Dallas, TX, Jan. 10-15, 1999, pp. 153-156.
73. Tsegaye, T., A. Fahsi, T. Coleman, P. O'Neill, R. Lang, and J. Petrella, "The Temporal Pattern of Radar Backscatter and Soil Moisture Distribution Under Bare and Vegetated Plots," Proc. of ACSM-ASPRS Annual Convention, Portland, Oregon, May 17-21, 1999, pp. 766-773.
74. O'Neill, P., A. Hsu, and T. Jackson, "Comparison between SLMR and ESTAR Soil Moisture Retrieval in SGP97," Proc. of IGARSS '99, IEEE, Hamburg, Germany, June 28-July 2, 1999, vol. IV, pp. 1908-1910.
75. Hsu, A., T. Jackson, and P. O'Neill, "Comparison of ESTAR and SSM/I Derived Surface Soil Moisture," Proc. of IGARSS '99, IEEE, Hamburg, Germany, June 28-July 2, 1999, vol. IV, pp. 1911-1913.

76. Kim, E., P. O'Neill, T. Jackson, and D. Le Vine, "Scaling of Passive Microwave Observations from SGP97 and Implications for SGP99 and AMSR," Proc. of IGARSS '99, IEEE, Hamburg, Germany, June 28-July 2, 1999.
77. Tsegaye, T., R. Inguva, R. Lang, P. O'Neill, A. Fahsi, T. Coleman, W. Tadesse, N. Rajbhandari, S. Aburime, and P. de Mattheis, 1999. "Microwave Remote Sensing of Soil Moisture with Vegetation Effects," in *Remote Sensing for Earth Science, Ocean, and Sea Ice Applications*, G. Cecchi, E. Engman, and E. Zilioli (eds.), *Proceedings of SPIE*, Sept. 20-24, 1999, Florence, Italy, vol. 3868, pp. 36-47.
78. Peters-Lidard, C.D., F. Pan, P.E. O'Neill, A.Y. Hsu, and P.R. Houser, 2000. "Quantifying the Relationship Between Remotely-Sensed and Modeled Soil Moisture," (abstract and poster only), GEWEX / BAHC Intl. Workshop on Soil Moisture Monitoring, Analysis, and Prediction for Hydrometeorological and Hydroclimatological Applications, Norman, OK, May 16-18, 2000, p. 27.
79. O'Neill, P.E., A.Y. Hsu, E.J. Kim, and E.J. Burke, 2000. "Use of Coupled SVAT and Microwave Emission Models for Soil Moisture Estimation in SGP97," Proc. of IGARSS '00, IEEE, Honolulu, Hawaii, July 24-28, 2000, vol. III, pp. 1066-1068.
80. Weissman, D., D. LeVine, T. Dod, and P. O'Neill, 2000. "Dependence of the Element Patterns of HYDROSTAR on Mutual Coupling," First Intl. Microwave Radiometer Calibration Workshop, College Park, MD, October 30-31, 2000.
81. O'Neill, P., 2001. "Chapter IX: Trade Studies Update" and "Chapter X: IIP Projects Update" in "Soil Moisture Mission Workshop Report," Soil Moisture Mission Working Group, NASA Land Surface Hydrology Program, Las Vegas, NV, Sept. 12-13, 2000.
81. Hsu, A., P. O'Neill, C. Peters-Lidard, and T. Jackson, 2001. "Intercomparison of Surface Soil Moisture Derived from ESTAR and Predicted by NOAH," Spring Meeting, AGU, Boston, MA, May 29-June 2, 2001.
82. D. Entekhabi, E. Njoku, P. Houser, R. Gurney, T. Jackson, J. Kimball, R. Koster, K. McDonald, P. O'Neill, S. Running, J. Van Zyl, and E. Wood, 2001. "Spaceborne Remote Sensing of Soil Moisture and Freeze-Thaw Dynamics at High Resolution Using Combined Active and Passive Instruments," Spring Meeting, AGU, Boston, MA, May 29-June 2, 2001.
83. O'Neill, P., A. Hsu, E. Kim, C. Peters-Lidard, and T. England, 2001. "Performance Comparison of a Point-Scale LSP Model and the NOAH Distributed SVAT Model for Soil Moisture Estimation Using Microwave Remote Sensing," Proc. of IGARSS '01, Sydney, Australia, July 9-13, 2001.
84. Pellerano, F., P. O'Neill, and L. Dod, 2001. "An Architecture Trade Study for Passive 10 km Soil Moisture Measurements from Low-Earth Orbit," Proc. of IGARSS '01, Sydney, Australia, July 9-13, 2001.
85. Peters-Lidard, C., F. Pan, A. Hsu, and P. O'Neill, 2001. "ESTAR- and Model-Derived Multiscaling Characteristics of Soil Moisture during SGP97, Washita '92, and Washita '94," Proc. of IGARSS '01, Sydney, Australia, July 9-13, 2001.

86. Shi, J-C, Q. Li, K. Chen, T. Jackson, E. Njoku, and P. O'Neill, 2001. "A Numerical Simulation of Estimating Soil Moisture with L-Band Radiometer," Proc. of IGARSS '01, Sydney, Australia, July 9-13, 2001.
87. Peters-Lidard, C., F. Pan, A. Hsu, and P. O'Neill, 2002. "Determinants of SGP97 Surface Soil Moisture Patterns from ESTAR and NOAA," Mississippi River Climate and Hydrology Conference, AMS and GEWEX Americas Prediction Project, New Orleans, LA, May 13-17, 2002.
88. Piepmeier, J., F. Pellerano, P. O'Neill, D. LeVine, E. Kim, and T. Doiron, 2002. "Synthetic Thinned Aperture Radiometry (STAR) Technologies Enabling 10-km Soil Moisture Remote Sensing from Space," ESTC Conference, Pasadena, CA, June 11-13, 2002.
89. Shi, J-C, E. Njoku, K. Chen, T. Jackson, P. O'Neill, 2002. "Estimation of Soil Moisture Change with the PALS L-band Radiometer," Proc. of IGARSS'02, Toronto, Canada, June 24-28, 2002.
90. Lang, R., C. Utku, P. de Mattheaïs, T. Tsegaye, P. O'Neill, and C. Laymon, 2002. "Active and Passive Microwave Remote Sensing of Soil Moisture through Corn Fields of Varying Density," URSI General Assembly, Maatstricht, Germany, August 17-24, 2002.
91. O'Neill, P., A. Joseph, G. De Lannoy, R. Lang, C. Utku, E. Kim, P. Houser, T. Gish, and C. Daughtry, 2003. "Active/Passive Microwave Remote Sensing for Soil Moisture Retrieval Through a Growing Season," ISEMA 2003 Conference, Rotorua, New Zealand, March 24-26, 2003, pp. 342-349.
92. Jackson, T. and P. O'Neill, 2003. "Satellite Remote Sensing of Soil Water Content: Current and Future Outlook," ISEMA 2003 Conference, Rotorua, New Zealand, March 24-26, 2003.
93. De Lannoy, G., P. Houser, P. O'Neill, T. Gish, N. Verhoest, and F. De Troch, 2003. "Validation of the Community Land Model (CLM) with field data from the OPE³ field site," EGS-AGU Conference, Nice, France, April, 2003.
94. O'Neill, P., A. Joseph, G. De Lannoy, R. Lang, C. Utku, E. Kim, P. Houser, and T. Gish, 2003. "Soil Moisture Retrieval Through Changing Corn Using Active / Passive Microwave Remote Sensing," IGARSS '03, Toulouse, France, July, 2003.
95. Peters-Lidard, C., Y. Wu, M. Tischler, and P. O'Neill, 2003. "Operational Modeling of Soil Moisture at Local and Regional Scales," First Interagency Conference on Research in the Watersheds, Benson, AZ, Oct. 27-30, 2003.
96. Hsu, A., T. Jackson, and P. O'Neill, 2003. "An Assessment of the Use of AMSE-E 10 GHz Data for Soil Moisture Estimation in SMEX02," AGU Fall Meeting, San Francisco, CA, Dec., 2003.
97. Njoku, E., T. Chan, W. Crow, D. Entekhabi, P. Houser, A. Hsu, T. Jackson, P. O'Neill, J. Shi, and X. Zhan, 2003. "An Observing System Simulation Experiment for HYDROS Soil Moisture Retrievals," AGU Fall Meeting, San Francisco, CA, Dec., 2003.
98. Njoku, E., M. Spencer, K. McDonald, J. Smith, P. Houser, T. Doiron, P. O'Neill, R. Girard, and D. Entekhabi, 2004. "The HYDROS Mission: Requirements and Baseline System Design," IEEE Aerospace Conference, Big Sky, Montana, March, 2004.

99. O'Neill, P., E. Njoku, T. Chan, W. Crow, A. Hsu, and JC Shi, 2004. "Comparison of Soil Moisture retrieval Algorithms Using Simulated Hydros Brightness Temperatures," Proc. of IGARSS'04, Anchorage, AK, Sept. 20-24, 2004.
100. Shi, JC, K. Chen, Y. Kim, J. van Zyl, G. Sun, P. O'Neill, T. Jackson, and D. Entekhabi, 2004. "Estimation of Soil Moisture with L-Band Multi-Polarization Radar," Proc. of IGARSS'04, Anchorage, AK, Sept. 20-24, 2004.
101. Lang, R., C. Utku, P. O'Neill, and T. Tsegaye, 2004. "Role of Albedo in Sensing Soil Moisture under Vegetation with Passive L-Band Algorithms," Proc. of IGARSS'04, Anchorage, AK, Sept. 20-24, 2004.
102. O'Neill, P., E. Njoku, J. Shi, and E. Wood, 2005. "Development of Soil Moisture Retrieval Algorithms for the Hydros Microwave Radiometer," Proc. of IGARSS'05, Seoul, Korea, July 24-30, 2005.
103. Crow, W., T. Chan, A. Hsu, E. Njoku, P. O'Neill, J. Shi, D. Entekhabi, and T. Jackson, 2005. "An Observing System Simulation Experiment for Hydros Radiometer-Only Soil Moisture and Freeze-Thaw Products," Proc. of IGARSS'05, Seoul, Korea, July 24-30, 2005.
104. Entekhabi, D., E. Njoku, P. O'Neill, Y. Kim, and P. Houser, "The Hydrosphere State (Hydros) Soil Moisture and Freeze/Thaw Pathfinder Mission: Science Objectives and Data Products," Proc. of IGARSS'05, Seoul, Korea, July 24-30, 2005.
105. Shi, J.C., K.S. Chen, P.E. O'Neill et al., "Estimation of Soil Moisture with the Combined L Band Radar and Radiometer Measurements," Proc. of IGARSS'05, Seoul, Korea, July 24-30, 2005.
106. O'Neill, P.E., R.H. Lang, K.R. Carver, M. Kurum, and C. Utku, "Multi-Sensor Microwave Remote Sensing using NASA's Combined Radar/Radiometer (ComRAD) System," Proc. of MicroRad'06: Specialist Meeting on Microwave Radiometry and Remote Sensing Applications, San Juan, Puerto Rico, Feb. 28-March 3, 2006.
107. Entekhabi, D., E. Njoku, and P. O'Neill, "The Hydros Soil Moisture and Freeze/Thaw Mission: Science Algorithm Development and Status," Proc. of MicroRad'06: Specialist Meeting on Microwave Radiometry and Remote Sensing Applications, San Juan, Puerto Rico, Feb. 28-March 3, 2006.
108. Joseph, A., R. van de Velde, P. O'Neill, Z. Su, S. Liang, T. Jackson, R. Lang, E. Kim, and T. Gish, "Passive Microwave Soil Moisture Retrieval Using Ground-Based L-Band (1.4 GHz) Radiometer Data Acquired during the 2002 Growing Season," AGU Spring Assembly, Baltimore, MD, May, 2006.
109. Moran, S., T. Keefer, G. Paige, R. Scott, W. Emmerich, M. Cosh and P. O'Neill, "Partitioning Evapotranspiration Using Diurnal Surface Temperature Variation," Second Interagency Conference on Research in the Watersheds, USDA, Coweeta Hydrologic Laboratory Conference Center, Otto, NC, May 16-18, 2006.
110. Piepmeier, J., C. Johnson-Bey, P. O'Neill, W. Thompson, and C. Patel, "Low-Power Radio-Frequency Analog-to-Digital Microwave Radiometry with Application to Soil Moisture Remote Sensing," Final Report, Advanced Component Technology Program ACT-02, Earth Science Technology Office, NASA, April, 2006.

111. O'Neill, P., M. Owe, B. Gouweleeuw, E. Njoku, J. Shi, and E. Wood, 2006. "Hydros Soil Moisture Retrieval Algorithms: Status and Relevance to Future Missions," Proc. of IGARSS'06, Denver, Colorado, July 31-August 4, 2006.
112. Shi, JC, E. Njoku, T. Jackson, and P. O'Neill, 2006. "Evaluation of Potential Error Sources for Soil Moisture Retrieval from Satellite Microwave Radiometers," Proc. of IGARSS'06, Denver, Colorado, July 31-August 4, 2006.
113. Shi, JC, E. Njoku, T. Jackson, K. Chen, and P. O'Neill, "Estimation of Soil Moisture with Dual-Frequency Radiometer –PALS," 2nd Intl. Symposium on Recent Advances in Quantitative Remote Sensing (RAQRS'II), Valencia, Spain, Sept. 25-29, 2006.
114. Kurum, M., R. Lang, P. O'Neill, A. Joseph, T. Jackson, M. Cosh, R. Nelson, and M. Spicknall, "Microwave Soil Moisture Estimation Through Tree Canopies Using an L Band Active/Passive System," Proc. of URSI Commission F: Wave Propagation and Remote Sensing, Ottawa, Ontario, Canada, July 22-26, 2007.
115. O'Neill, P., R. Lang, M. Kurum, A. Joseph, T. Jackson, M. Cosh, R. Nelson, and M. Spicknall, "ComRAD Active/Passive Microwave Measurements of Tree Canopies," Proc. of IGARSS'07, Barcelona, Spain, July 23-27, 2007.
116. Walker, J. and 62 others including P. O'Neill, "The National Airborne Field Experiment Data Sets," Proc. of MODSIM 2007: International Congress on Modelling and Simulation, Modelling and Simulation Society of Australia and New Zealand, Christchurch, New Zealand, December 10-13, 2007.
117. Entekhabi, D., E. Njoku, P. O'Neill, T. Jackson, S. Boland, J. Entin, and E. Im, "Soil Moisture Active and Passive (SMAP) Mission," Fall Meeting, American Geophysical Union, San Francisco, CA, December 10-14, 2007.
118. Joseph, A., R. van der Velde, P. O'Neill, R. Lang, and T. Gish, "Soil Moisture Retrieval During a Corn Growth Cycle Using L-Band (1.6 GHz) Radar Observations," Fall Meeting, American Geophysical Union, San Francisco, CA, December 10-14, 2007.
119. Kurum, M., R. Lang, P. O'Neill, A. Joseph, T. Jackson, and M. Cosh, "Transient Response from a Vegetation Canopy to Stepped Frequency Radar," National Radio Science Meeting, URSI, Boulder, CO, January 3-6, 2008.
120. Kurum, M., R. Lang, P. O'Neill, A. Joseph, T. Jackson, and M. Cosh, "Estimation of Canopy Attenuation for Active/Passive Microwave Soil Moisture Retrievals," 10th Specialist Meeting on Microwave Radiometry and Remote Sensing of the Environment (MicroRad'08), Florence, Italy, March 11-14, 2008.
121. O'Neill, P., R. Lang, M. Kurum, A. Joseph, T. Jackson, and M. Cosh, "Microwave Soil Moisture Retrieval Under Trees," Proc. of IGARSS'08, IEEE, Boston, MA, July 6-11, 2008.

122. Joseph, A., P. O'Neill, R. van der Velde, R. Lang, and T. Gish, "A Vegetation Correction Methodology for Time Series Based Soil Moisture Retrieval from C-band Radar Observations," Proc. of IGARSS'08, IEEE, Boston, MA, July 6-11, 2008.
123. Kurum, M., R. Lang, P. O'Neill, A. Joseph, M. Cosh, and T. Jackson, "Forest Canopy Effects on the Estimation of Soil Moisture at L-Band," Proc. of IGARSS'08, IEEE, Boston, MA, July 6-11, 2008.
124. Shi, JC, E. Njoku, T. Jackson, P. O'Neill, and K. Chen, "Estimation of Soil Moisture with Dual-Frequency Radiometer – PALS," Proc. of IGARSS'08, IEEE, Boston, MA, July 6-11, 2008.
125. Njoku, E., D. Entekhabi, P. O'Neill, and T. Jackson, "SMAP Active / Passive Approach for Soil Moisture Sensing," Proc. of IGARSS'08, IEEE, Boston, MA, July 6-11, 2008.
126. Entekhabi, D., E. Njoku, P. O'Neill, T. Jackson, J. Entin, and E. Im, "Soil Moisture Active and Passive (SMAP) Mission Overview," Proc. of IGARSS'08, IEEE, Boston, MA, July 6-11, 2008.
127. Kurum, M., R. Lang, and P. O'Neill, "Estimation of Canopy Attenuation at L-Band by a Time-Domain Analysis of Radar Backscatter Response," URSI General Assembly, Chicago, Illinois, August, 2008 [full paper being submitted to *IEEE Transactions on Geoscience and Remote Sensing*].
128. Kellogg, K., E. Njoku, K. McDonald, P. O'Neill, and D. Entekhabi, "The Soil Moisture Active and Passive (SMAP) Mission," Proc. of SPIE Remote Sensing Symposium, Cardiff, Wales, UK, Sept. 15-18, 2008.
130. Jackson, T., D. Entekhabi, E. Njoku, P. O'Neill, and J. Entin, "Soil Moisture Active / Passive (SMAP) Mission Concept," Atmospheric and Environmental Remote Sensing Data Processing and Utilization IV: Readiness for GEOSS II, Proc. of SPIE Conference 7085, San Diego, CA, August 12-14, 2008.